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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/20/2000

Kenneth R. Owens

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DALLAS, TX 75201-2980

EXAMINER

WONG, WARNER

ART UNIT

PAPER NUMBER

2668

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/692,885	Applicant(s) OWENS ET AL.	
	Examiner Wamer Wong	Art Unit 2668	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-9, 11, 13, 14, and 17-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,138,615, Lamport et al. (Lamport) in view of U.S. Patent 6,167,025, Hsing et al. (Hsing).

In regard to claim 1, Lamport discloses a method for a data network comprised of a plurality of data switches interconnected to form a plurality of data paths forming a mesh configuration of data switches, comprising:

 sending a first data message (fig. 3, #126 sending data) over a first data path (fig. 3, P2) from a first data switch (fig. 3, #126) to a second data switch (figure 3, #140);

 receiving at said first data switch status messages from said second data switch (col. 37, lines 15-48, where the keep-alive messages are status messages used to indicate the functionality of a given switch);

 inhibiting generation of a switch status message at said first data switch destined for a third data switch in the first data path upon not receiving switch status messages from said second data switch at said first data switch (col. 37, lines 45-48 & 54-61, where upon not receiving an acknowledgement after several attempts, the link is

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declared to be dead and the second phase/phase two will initiate, where all data packets, including keep-alive/switch status messages will be stopped, col. 39, lines 3-5).

However, the method of Lamport lacks initiating a redirection of subsequent data messages over an alternate data path through the data network.

The invention of Hsing describes an initiation redirection of subsequent data messages over an alternate path through the data network (col. 14, lines 46-58 where an upstream switch initiates a reroute of data message connection to an alternate path to the destination device when it detects the current path to be faulty)."

It would have been obvious to one with ordinary skill in the art at the time of invention to incorporate the step of initiating redirection of subsequent data messages over an alternate path through the data network in Hsing's method after the step of inhibiting generation of switch status messages upon not receiving switch status messages (i.e. failed link) in Lamport's method.

The motivation that it is obvious to combine the teachings is for restoring the virtual connections which is "to offering a wide degree of flexibility in terms of the degree of protection offered to individual users and/or applications preferably on a per connection or per session basis," (Hsing, col. 4, lines 1-4).

In regards to claim 11, Lamport discloses, a method in a data network comprised of a plurality of data switches interconnected to form a plurality of data paths forming a mesh configuration of data switches, comprising:

receiving at least a first data message (fig. 3, #140 receiving data) over a first data path (fig. 3, P2) sent from a first data switch (fig. 3, #126) to a second data switch (figure 3, #140);

sending at least a first data message (fig. 3, #126 sending data) from said second data switch to a third data switch (fig. 3, #124);

receiving at said second data switch one or more switch status messages indicating the functionality of said third data switch (col. 37, lines 15-48 where the keep-alive messages are status messages used to indicate the functionality of a given switch);

inhibiting generation of a switch status message at said second data switch destined for said first data switch upon not receiving said switch status messages at said second data switch from said third data switch (col. 37, lines 45-48 & 54-61, where upon not receiving an acknowledgement after several attempts, the link is declared to be dead and the second phase/phase two will initiate, where all data packets in the network, including keep-alive/switch status messages will be stopped, col. 39, lines 3-5).

However, the method of Lamport lacks initiating a redirection of subsequent data messages away from said second and third data switches via a second data path through said data network.

The invention of Hsing describes an initiation redirection of subsequent data messages away from the second and third data switches via a second (alternate) path through the data network (col. 14, lines 46-58 where an upstream switch initiates a reroute of data message connection to an alternate path away from the affected nodes to the destination device when it detects the current path to be faulty)."

It would have been obvious to one with ordinary skill in the art at the time of invention to incorporate the step of initiating redirection of subsequent data messages away from the affected nodes over an alternate path through the data network in Hsing's method after the step of inhibiting generation of switch status messages upon not receiving switch status messages (i.e. failed link) in Lamport's method.

The motivation that it is obvious to combine the teachings is for restoring the virtual connections which is "to offering a wide degree of flexibility in terms of the degree of protection offered to individual users and/or applications preferably on a per connection or per session basis," (col. 4, lines 1-4).

In regard to claims 3 and 13, Lamport and Hsing disclose the method of claims 1 and 11. However, Lamport lacks "said data switches are asynchronous transfer mode switches." Hsing however, further discloses "said data switches are asynchronous transfer mode switches (figure 1)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the ATM switches with the method of claims 1 and 11 for the same reasons and motivation as in claims 1 and 11.

In regard to claims 4 and 14, Lamport and Hsing disclose the method of claims 1 and 11. However, Lamport and Hsing lack "said data switches are IP routers."

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Although Lamport and Hsing disclose ATM switches and not IP routers, it would have been obvious to one with ordinary skill in the art at the time of invention to choose IP routers instead of ATM switches because the choice is dependent on the type of network the switches operate in. If it is an ATM network, the switches need to be able to handle ATM traffic; and if the network is IP, the routers need to be able to handle IP traffic. Thus the choice of IP routers versus ATM switches is a matter of design choice. The motivation for choosing IP routers is to ensure the routers work properly within their network.

In regard to claims 5 and 17, Lamport and Hsing disclose the method of claims 5 and 11. However, Hsing lacks "said switch status messages are comprised of a predetermined format, (that of a) switch liveliness message." Lamport however, further discloses "said switch status messages are comprised of a predetermined format, [that of a] switch liveliness message (col. 37, lines 15-48 where the ACK messages are the status messages and it is known in the art that ACK messages have a predetermined format; an ACK message is the functional equivalent of a liveliness message because it allows the receiving switch to know that there isn't a failure in the link of the sending switch)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the predetermined format message with the method of claims 1 and 11 for the same reasons and motivation as in claims 1 and 11.

In regard to claims 6 and 18, Lamport and Hsing disclose the method of claims 1 and 11. However, Lamport lacks describing "at least one of said data switches maintains a table of incoming link and path identifiers and of outgoing link and path

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identifiers." Hsing however, further discloses "at least one of said switches maintains a table of incoming link and path identifiers and of outgoing link and path identifiers (figures 2, 3A, 3B, and 3C where element 212 will contain information on the incoming and outgoing calls which will contain path identifiers as seen in figures 3A, 3B, and 3C)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the link table with the method of claims 1 and 11 for the same reasons and motivation as in claims 1 and 11.

In regard to claims 7 and 19, Lamport and Hsing disclose the method of claims 1 and 11. However, Lamport lacks "said first data message represents speech information." Hsing however, further discloses "said first data message represents speech information (col. 3, lines 8-10 represent some of the types of communications that can benefit from the fault protection system, teleconferencing (which includes voice) can be one of those options)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the speech information with the method of claims 1 and 11 for the same reasons and motivation as in claims 1 and 11.

In regard to claims 8 and 20, Lamport and Hsing disclose the method of claims 1 and 11. However, Lamport lacks "said first data message represents computer data." Hsing however, further discloses "said first data message represents computer data (col. 3, lines 8-10 represent some of the types of communications that can benefit from the fault protection system, World Wide Web applications is computer data)" It would have been obvious to one with ordinary skill in the art at the time of invention to include

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the computer data with the method of claims 1 and 11 for the same reasons and motivation as in claims 1 and 11.

In regard to claims 9 and 21, Lamport and Hsing disclose the method of claims 1 and 11. However, Lamport lacks "sending subsequent data messages to the third/fourth data switch (col. 14, lines 44-46 implying that in a communication system the only way to determine which switch failed is to communicate the information by sending messages between switches, which can include a third data switch)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the re-directing to a third switch with the method of claims 1 and 11 for the same reasons and motivation as in claims 1 and 11.

3. Claims 2, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lamport and Hsing as applied to claims 1, 11 and 23 above, and further in view of McGill (U.S. Patent 5,436,886).

In regard to claims 2 and 12, Lamport and Hsing disclose the method of claims 1 and 11. However, Lamport and Hsing lack "said alternate data path is a protection path through said network." McGill however, discloses "said alternate data path is a protection path through said network (figure 5, where the primary path from SFO is broken, thus the protection path from SFI is activated and used as can be read in col. 6, lines 12-17)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the protection path with the method of claims 1 and 11 for the purpose of having an alternate path should the primary path not transmit or fail. The

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motivation is that such design may withstand multiple faults in a system (McGill, col. 2, lines 12-13).

In regard to claim 10, Lamport and Hsing disclose the method of claims 1 and 11. However, Lamport and Hsing lack "said first data switch is a protection switch element." McGill however, discloses "said first data switch is a protection switch element (figure 5, where the primary switch, SFO, is no longer able to transmit data, therefore the protection switch SF1 is activated and used as can be read in col. 6, lines 12-17)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the protection path with the method of claims 1 and 11 for the purpose of having an alternate path should the primary path not transmit or fail. The motivation is that such design may withstand multiple faults in a system (McGill, col. 2, lines 12-13).

4. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lamport and Hsing as applied to claim 11 above, and further in view of Shew et al. (U.S. Patent 6,530,032 B1).

In regard to claim 15, Lamport and Hsing disclose the method of claim 11. However, Lamport and Hsing lack "said data switches are digital cross connect switches controlled by MPLS." Shew however, discloses "said data switches are digital cross-connect switches controlled by MPLS (col. 2, lines 8-11 where electrical is taken to be digital; col. 2, lines 28-32 identifies the MPLS controller)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the digital switches

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and MPLS control with the method claim 11 for the purpose of re-routing data with greater ease. The motivation being shorter delays in re-routing data when failures occur (Shew, col. 1, lines 19-28, col. 5, lines 31-36).

In regard to claim 16, Lamport and Hsing disclose the method of claim 11. However, Lamport and Hsing lack "said data switches are optical cross connects and switches controlled by MPLS." Shew however, discloses "said data switches are optical cross-connects and switches' controlled by MPLS (col. 2, lines 8-11 ; col. 2; lines 28-32 identifies the MPLS controller)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the optical switches and MPLS control with the method claim 11 for the purpose of re-routing data with greater ease. The motivation is that it beneficially provides shorter delays in re-routing data when failures occur (Shew, col. 1, lines 19-28, col. 5, lines 31-36).

5. Claim 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lamport and further in view of Olson (U.S. Patent 5,245,616) and Hsing.

In regard to claim 22, Lamport discloses a method in a data network comprised of a plurality of data switches (fig. 3, #124, 126, 140, 142) interconnected to form a plurality of data paths (fig. 3, P1, P2) form a mesh configuration of data switches, comprising:

sending at least a first data message (fig. 3, #140 switch sending data) over a first data path (fig. 3, P2) from said first switch to said second switch;

However, Lamport lacks describing sending a switch status message to the first switch in response to not receiving a first data message from the first switch.

Olson discloses "sending a switch status message to said first switch in response to not receiving (receive error) said first data message from said first switch" (col. 1, lines, 20-26, "The NAK signal can indicate that there is an error in the receive data").

It would have been obvious to one with ordinary skill in the art at the time of invention to add a step of sending a the NAK status message to the upstream node as in Olson's method in response to when data is not being received in Lamport's method.

The motivation that it is obvious to combine the teachings is to reduce transmission of unneeded duplicate message packets (Olson, col. 2, lines 27-28).

However, the combined method of Lamport and Olson lack initiating a redirection of subsequent data messages over an alternate data path through said data network.

The invention of Hsing describes an initiation of redirection of subsequent data messages over an alternate data path through the data network (col. 14, lines 46-58 where an upstream switch initiates a reroute of data message connection to an alternate path the destination device when it detects the current path to be faulty)."

It would have been obvious to one with ordinary skill in the art at the time of invention to incorporate the step of initiating redirection of subsequent data messages over an alternate path through the data network in Hsing's method after the step of receiving a NAK status message in the combined method of Lamport and Olson.

The motivation that it is obvious to combine the teachings is for restoring the virtual connections which is " to offering a wide degree of flexibility in terms of the

degree of protection offered to individual users and/or applications preferably on a per connection or per session basis," (col. 4, lines 1-4).

In regard to claim 23, Lamport discloses "in a data network comprised of a plurality of data switches interconnected to form a plurality of data paths forming a mesh configuration of data switches, a method of re-routing data messages around a data switch comprised of the steps of:

sending at least a first data message (fig. 3, #140 switch sending data) over a first data path(fig. 3, P2) from a first switch (fig. 3, #140) to a second switch (fig. 3, #140);

sending said at least first data message from said second switch to a third switch (fig. 3, #124));

However, Lamport lacks describing sending a switch status message to at least one of said first and second switches in response to not receiving said first data message from said first switch.

Olson discloses "sending a switch status message to said first switch in response to not receiving (receive error) said first data message from said first switch" (col. 1, lines, 20-26, "The NAK signal can indicate that there is an error in the receive data").

It would have been obvious to one with ordinary skill in the art at the time of invention to add a step of sending a the NAK status message to the upstream node as in Olson's method in response to when data is not being received in Lamport's method.

The motivation that it is obvious to combine the teachings is to reduce transmission of unneeded duplicate message packets (Olson, col. 2, lines 27-28).

However, the combined method of Lamport and Olson lacks initiating a redirection of subsequent data messages over an alternate data path through said data network

Hsing discloses the initiating of redirection of subsequent data messages over an alternate data path through said data network (col. 14, lines 46-58 where an upstream switch initiates a reroute of data message connection to an alternate path to the destination device when it detects the current path to be faulty)."

It would have been obvious to one with ordinary skill in the art at the time of invention to incorporate the step of initiating redirection of subsequent data messages over an alternate path through the data network in Hsing's method after the step of receiving a NAK status message in the combined method of Lamport and Olson.

The motivation that it is obvious to combine the teachings is for restoring the virtual connections which "is offering a wide degree of flexibility in terms of the degree of protection offered to individual users and/or applications preferably on a per connection or per session basis," (col. 4, lines 1-4).

6. Claim 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lamport, Olson and Hsing as applied to claim 23 above, and further in view of McGill.

In regard to claim 24, Lamport, Olson and Hsing disclose the method of claim 23. However, Lamport, Olson and Hsing lack "said first data switch is a protection switch element." McGill however, discloses "said first data switch is a protection switch element (figure 5, where the primary switch, SFO, is no longer able to transmit data,

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therefore the protection switch SF1 is activated and used as can be read in col. 6, lines 12-17)." It would have been obvious to one with ordinary skill in the art at the time of invention to include the protection path with the network of Lamport, Olson and Hsing for the purpose of having an alternate path should the primary path not transmit or fail. The motivation is that such design may withstand multiple faults in a system (McGill, col. 2, lines 12-13).

Response to Arguments

7. Applicant's arguments filed 30 December 2005 regarding claims 1-24 have been considered but they are not persuasive.

Regarding claims 1, 3-9, 11, 13, 14 and 17-21, the applicant argues that Lamport and Hsing do not inhibit their keep-alive (switch status) messages as required by the claimed invention (Remarks, p. 8, lines 15-18). The examiner respectfully disagrees.

The examiner cites that Lamport inhibits generation of all messages, including, keep alive messages, when the link is declared dead (col. 37, lines 45-63, indicates that if an acknowledgement is still not received after a few more attempts, the link is declared to be dead and second phase/phase 2 is initiated. Col. 39, lines 3-5 indicates that during phase 2, transmission of all data packets, including all keep-alive messages, will be stopped. Thus, Lamport discloses such argued claim limitations.

The applicant also argues that Lamport and Hsing, using piecemeal analysis, do not use the inhibit capability to trigger a redirection of data messages onto an alternate

path (Remarks, p. 8, lines 19-22 and p. 9, lines 6-9). The examiner respectfully disagrees.

The examiner cites that Lamport inhibits generation of keep-alive message per the above explanation. The examiner separately cites that Hsing trigger a redirection of data messages onto an alternate path (Hsing, col. 14, lines 46-58). Thus, the combined system of Lamport and Hsing disclose such argued claim limitations.

Regarding claims 2, 10 and 12, the applicant argues that that the McGill patent does not have additional disclosure combinable with Lamport and Hsing (Remarks, p. 8, lines 31-32 & p. 10, lines 1-3). The examiner noted that the office action has provided a motivation for combining the McGill patent with that of Lamport and Hsing. Unless the applicant discloses further reasons why the McGill patent is not combinable with patents of Lamport and Hsing, the examiner concludes that the patents are combinable.

Regarding claims 15 and 16, the applicant argues that that the Shew patent does not have additional disclosure combinable with Lamport and Hsing (Remarks, p. 10, lines 11-14). The examiner noted that the office action has provided a motivation for combining the Shew patent with that of Lamport and Hsing. Unless the applicant discloses further reasons why the Shew patent is not combinable with patents of Lamport and Hsing, the examiner concludes that the patents are combinable.

Regarding claims 22 and 23, the applicant argues, using piecemeal analysis, that the Hsing patent does not describes the capability for the first data switch to receive a status message from a second data switch which causes an initiation of redirection of subsequent data messages onto an alternate data path in response to the second data

switch not receiving a data message from the first data switch on the data path

(Remarks, p. 11, lines 1-6). The examiner respectfully disagrees.

The examiner cites that Olson describes a NAK signal sent from the second data switch to the first data switch upon not receiving a data message from the first data switch over the (failing) data path. The examiner separately cites that Hsing discloses an initiation of redirection of subsequent data messages onto an alternate data path upon a failing data path. Thus, the combined system of Lamport, Olson and Hsing disclose such argued claim limitations.

Regarding claims 24, the applicant argues that that the McGill patent does not have additional disclosure combinable with Lamport, Olson and Hsing (Remarks, p. 11, lines 27-29). The examiner noted that the office action has provided a motivation for combining the McGill patent with that of Lamport, Olson and Hsing. Unless the applicant discloses further reasons why the McGill patent is not combinable with patents of Lamport and Hsing, the examiner concludes that the patents are combinable.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Warner Wong whose telephone number is 571-272-8197. The examiner can normally be reached on 5:30AM - 2:00PM, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Warner Wong
Examiner
Art Unit 2616

WW


RICKY Q. NGO
SUPERVISORY PATENT EXAMINER